

Prior Art and Patentability (Singapore)

by **Tng Sheng Rong**, Edina Lim, and Claire Mak, **Rajah & Tann**

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A Practice Note addressing the key principles of prior art and patentability in Singapore, which affect the scope of protection for any patent granted in the jurisdiction. This Practice Note provides guidance for determining whether a reference document or activity qualifies as prior art under the Singapore Patents Act 1994 (2020 Rev Ed). It explores novelty and inventive step (obviousness), detailing the analytical framework used in Singapore to assess an invention's patentability. Key topics include the requirements for public availability, the enabling disclosure test for novelty, and the application of the four-step Windsurfing test for determining obviousness. This resource also discusses the limited exceptions to prior art and the prohibition against "mosaicking" for novelty assessments. It contains valuable information for patent counsel responsible for a global patent portfolio and for those conducting freedom-to-operate (FTO) studies, helping them understand the framework for assessing patentability and the validity of third-party patents relevant to their client's business.

Prior Art

[Dates for Prior Art Determinations](#)

[Prior Art Documents](#)

[Prior Art Activities](#)

[Exceptions to Prior Art](#)

Novelty

[Scope of Claims and Claim Construction](#)

[Analytical Framework for Determining Novelty](#)

[Enabling Disclosure](#)

[Inherency](#)

[Other Key Novelty Considerations](#)

Inventive Step

[Relevant State of the Art](#)

[Four-Step Windsurfing Test](#)

[Secondary Considerations](#)

Practical Considerations

[Developing a Singapore Patent Portfolio](#)

[Evaluating Third-Party Singapore Patents](#)

[Addressing Infringement Allegations](#)

Strategies for Overcoming Obviousness Arguments

When conducting patentability and validity evaluations, global patent counsel must often determine whether a reference document or activity (collectively a "reference") qualifies as prior art. This determination is difficult because patent counsel must apply the law to different situations and even slight differences in a country's patent laws can have a significant impact on the final patentability and validity conclusion.

This Note discusses important considerations for determining whether a reference qualifies as prior art and the potential patentability in Singapore of an invention over the prior art and addresses novelty and inventive step (obviousness) in connection with both patentability and validity evaluations.

It explains Singapore's prior art law, identifies the key dates for determining if a reference is prior art to a patent application or issued patent (collectively a "patent"), and describes the analytical framework for evaluating an invention's patentability and validity in view of the prior art. It also discusses practical considerations for global patent counsel when developing a global patent portfolio and evaluating global FTO.

Prior Art

Under the [Singapore Patents Act 1994 \(2020 Rev Ed\)](#) (Patents Act), "prior art" (also referred to as "state of the art" (section 14(2), Patents Act)) comprises all matter (whether a product, process, information about either, or anything else) which, at any time before the actual filing date of the patent for the invention or an earlier priority date (the effective filing date), has been made available to the public anywhere in the world by written or oral description, by use, or in any other way (section 14(2), Patents Act). This includes both patent and non-patent documents, as well as activities that have been disclosed to the public. Examples of patent documents include:

- Published patent applications (whether local or foreign).
- Granted patents.

Examples of non-patent documents include:

- Scientific journal articles.
- Books and book chapters.
- Product brochures and manuals.
- Internet publications (for example, websites, blogs, and online forums).
- Any other publicly available written material.

Examples of activities occurring anywhere in the world that may constitute prior art include:

- Public oral or written disclosure.
- Public use.
- Commercial exploitation or demonstration of the invention to the public.
- Sale or offer for sale of the invention or a product embodying the invention.
- Display of the invention at an exhibition.

If made available to the public before the effective filing date of a Singapore patent application, all of the above examples may potentially be considered prior art and affect the patentability of the invention unless any exceptions apply.

Dates for Prior Art Determinations

The key dates for the purposes of a prior art assessment are:

- The patent application's filing date. The date on which the patent application is filed with the [Intellectual Property Office of Singapore](#) (IPOS) is the primary date for assessing prior art.
- Any earlier priority date. If the application claims priority from an earlier application (such as a foreign application under the Paris Convention for the Protection of Industrial Property ("Paris Convention")), the priority date is the date of the earliest application from which priority is validly claimed. The priority date would be the effective filing date for purposes of determining the existence of prior art for patentability and validity determinations for the subject matter claimed in the patent.
- International filing date (for Patent Co-operation Treaty (PCT) applications). For applications entering Singapore via the PCT national phase, the international filing date is treated as the filing date in Singapore. As with Paris Convention applications, the effective filing date could be earlier if the PCT application includes a valid priority claim. For more information on PCT patent applications, see [Practice Note, PCT Patent Applications International Phase: Overview](#).
- The patent application's publication date. The IPOS typically publishes Singapore patent applications 18 months after the earliest priority date. The publication date is not used to determine the prior art status of a reference against the application itself, but the published application is prior art against other patent applications filed after the publication date.

Under Singapore law, the relevant date for determining whether a reference is prior art is generally the earliest priority date (if claimed and valid) or, if no priority is claimed, the application's filing date (section 17, Patents Act). Therefore, prior art includes:

- Any disclosure that was available to the public earlier than the relevant patent application's effective filing date (section 14(2), Patents Act). For the avoidance of doubt, any disclosure made available to the public **on** the effective filing date will not constitute prior art.

- Any public use occurring anywhere in the world before the effective filing date. This includes demonstrations, sales, or use in a public setting.

To claim priority to an earlier patent application, all of the following requirements must be met:

- The earlier application must be an application filed in a country or territory that is a member of the Paris Convention or the World Trade Organization.
- The Singapore patent application must be filed within 12 months from the date of filing of the earlier application.
- The applicant for the Singapore patent application must make a declaration of priority in the Singapore application. This declaration should include:
 - the date of filing of the earlier application;
 - the country or territory in which the earlier application was filed; and
 - the application number of the earlier application.

The subject matter for which priority is claimed in the Singapore application must be disclosed in the earlier application. Only the content disclosed in an earlier application is entitled to an earlier priority date.

For more information on priority claims from a US perspective, see [Practice Note, Patent Prosecution: Domestic Benefit and Foreign Priority Claims](#).

Prior Art Documents

Key considerations for prior art documents include:

- The public availability requirement (see [Public Availability](#)).
- The potential scope of the prior art (see [Scope of Prior Art](#)).

Public Availability

To qualify as prior art, a document must have been publicly available before the patent application's effective filing date. The public availability requirement means that the document must have been made available to at least one member of the public who was free to use it ([Rohm and Haas Electronic Materials CMP Holdings, Inc \(formerly known as Rodel Holdings, Inc\) v NexPlanar Corp and another \[2017\] SGHC 310 \(Rohm and Haas\), at paragraph 47](#)).

Published patent applications are generally prior art against later patent applications filed after the application's publication date. Patent applications that are not published before the other application's effective filing date (that is, not made available to the public) are generally not considered part of the prior art.

However, there is an exception to this rule. If two inventions, A and B, are substantially the same, and separate patent applications are filed for each, the earlier-filed patent application A with an earlier priority date can be considered prior art against the later-filed patent application B even if application A is unpublished, as long as the matter contained in patent application A was both filed and eventually published (section 14(3), Patents Act). This exception only applies for the novelty assessment and does not apply in the inventiveness assessment of a claimed invention (section 15, Patents Act).

Subject to the above exception for patent applications, all documents, including non-patented published literature, must have been published before the effective filing date to qualify as prior art. Potential prior art documents include, but are not limited to, research publications, leaflets, and magazine articles (see [Genelab Diagnostics \(S\) Pte Ltd v Institut Pasteur \[2000\] SGCA 60](#) (*Genelab Diagnostics*); [FE Global Electronics Pte Ltd v Trek Technology \(Singapore\) Pte Ltd \[2006\] 1 SLR\(R\) 874](#) (*FE Global Electronics*), at paragraph 39; [Dextra Asian Co Ltd v Mariwu Industrial Co \(S\) Pte Ltd \[2006\] 2 SLR\(R\) 154](#) (*Dextra Asian*), at paragraph 51). In these cases, the courts considered non-patented forms of publications as possible prior art, though they were ultimately held to be irrelevant in the inquiry for novelty due to other reasons. For instance, in *Genelab*, one of the reasons was that the publications which formed part of the prior art led away from the disclosed invention rather than anticipating it, and accordingly the novelty contention failed (see paragraphs 46, and 48 to 50). Similarly, in *FE Global Electronics*, the novelty defence failed because none of the cited references, taken alone, contained clear and unmistakable directions to the claimed unitary massstorage device (three required a cable and the only unitary and integrated device was not a massstorage device) and, in any event, disparate prior art cannot be mosaicked unless a document directs the reader to do so (at paragraphs 38 to 41).

There is no requirement concerning the place or method of disclosure and therefore no restriction which excludes paperless information from being considered as potential prior art for novelty or inventive step determinations. For example, an article published solely on a website can potentially fulfill the public availability requirement (see [Dien Ghin Electronic \(S\) Pte Ltd v Khok Tai Ting \[2011\] SGHC 36](#) (*Dien Ghin Electronic*), at paragraph 51).

While the method of the disclosure is irrelevant, the burden of proof for establishing the existence of prior art when challenging a patent is on the patent challenger (*Dien Ghin Electronic*).

The obscurity of a document is irrelevant. As long as it has been made available to the public, it is considered part of the prior art. There is no requirement to show that the document has been read by a member of the public. A document is considered published as long as the public has a right to inspect it. In this regard,

"Even availability to a single member of the public will suffice. Similarly, availability to the public is satisfied if the document can be found on the shelves of a public library. It is irrelevant whether anyone knew it was available or had inspected it... Anticipation can therefore encompass a disclosure which the inventor was totally ignorant of."

([Institut Pasteur v Genelabs Diagnostics Pte Ltd \[2000\] SGHC 53](#), at paragraph 188.)

As cited in various Singapore cases, an anticipating description in a book will invalidate a patent if the book is on the shelf of a library open to the public "whether or not it was situated in a dark and dusty corner of the library" (see [First Currency Choice Pte Ltd v Main-Line Corporate Holdings Ltd and another appeal \[2007\] SGCA 50](#) (*First Currency Choice*), at paragraph 38, citing [Lux Traffic Controls Limited v Pike Signals Limited \[1993\] RPC 107](#), at paragraph 133 (*Lux Traffic Controls*)).

Scope of Prior Art

There is no requirement for anticipatory prior art to only be "analogous" to the technology of the claimed invention. Therefore, it is not strictly necessary that, for novelty purposes, the prior art must be in the same or similar field of endeavour as the claimed invention. If a single prior art reference discloses all the features of the claimed invention, the claim lacks novelty, even if the reference comes from a completely unrelated technical field. For subject matter disclosed in both a patent and its priority document, the prior art date for that subject matter is the filing date of the priority document. However, for subject matter that is disclosed only in the issued patent or published patent application but not in the priority document, such as where the subject matter was newly added to the subsequent patent application, the prior art date for the relevant subject matter is the actual filing date of the patent application itself, not the earlier priority date. This is because the priority claim does not extend to new matter that was not present in the priority document.

When evaluating the novelty and inventive step of a claimed invention, the assessment is performed on a feature-by-feature basis. This means that each element or aspect of the claimed invention is compared against the disclosures in the prior art. If a reference discloses only some, but not all, of the features of a claimed invention, then only those disclosed features are considered as prior art for the purposes of assessing novelty and inventive step. The remainder of the reference, which does not relate to the claimed invention, is not relevant for this assessment.

Prior Art Activities

To determine if an activity qualifies as prior art, the same elements as those required for prior art documents must be met (*Rohm and Haas, at paragraph 46*). The activity in question must have both:

- Occurred before the effective filing date.
- Resulted in the information being made available to at least one member of the public who is free (in law and equity) to use the information.

The public availability requirement will be met as long as the potential prior art was used in a public space so as to enable members of the place to see and understand it (*Windsurfing International Inc v Tabur Marine Ltd [1985] RPC 59 (Windsurfing)*). In a case where the public is able to handle, measure, and test an article, the public will have the opportunity to examine the article which amounts to prior art activity (*Lux Traffic Controls, at paragraph 133, as cited in the Singapore case of Rohm and Haas*).

Where the prior art activity concerns the use of a machine, the test is whether a skilled individual, when asked to describe its construction and operation, can write down a clear and unambiguous description of the claimed invention (*Lux Traffic Controls, at paragraph 134*). In *Lux Traffic Controls*, the court found that the use of a prototype traffic controller in field trials amounted to prior art activity in relation to traffic controllers. This was because contractors were free to examine the prototype controller, and this examination was sufficient to disclose the invention (*Lux Traffic Controls*).

An offer for sale may constitute prior art activity. For example, the courts determined that the sale of spectacle frames constituted prior art in relation to temple-mounted spectacle frames (*Contour Optik Inc and others v Pearl's Optical Co Pte Ltd and another [2002] SGHC 238, at paragraphs 42 and 43*). The court decided this based on a copy of a Japanese newspaper which published a photograph of the frame sold in Japan and on the evidence of expert witnesses. Whether the activity constitutes prior art does not turn on whether the activity was performed by the inventor or a third party (*Rohm and Haas*).

There is no geographical limit on the activity that may constitute prior art. Prior art activity comprises all matter made available to the public whether in Singapore or elsewhere (*Lee Tat Cheng v Maka GPS Technologies Pte Ltd [2018] SGCA 18, at paragraph 79*; see also section 14(2), Patents Act).

Exceptions to Prior Art

Certain disclosures are not considered to be prior art to a patent if the disclosure discloses the claimed invention within 12 months immediately preceding the effective filing date of the patent and resulted from any of the following:

- Unlawful access or a breach of confidence (section 14(4)(a) and section 14(4)(b), Patents Act).
- Display of the claimed invention by the inventor at an international exhibition, defined as an official or officially recognised international exhibition falling within the terms of the Convention on International Exhibitions established in 1928 (also referred to as the World Expo Convention) or any subsequent treaty or convention replacing that convention (section 2(1) and section 14(4)(c), Patents Act).
- Presentation by the inventor, or another person on the inventor's behalf or with their consent, of a paper disclosing the claimed invention before a learned society, which includes any club or association constituted in Singapore or whose main objective is the promotion of any branch of learning or science, or publication with the inventor's consent in the proceedings, journals, or publications of any learned society (sections 14(4)(d) and 14(5), Patents Act).
- Public disclosure by the inventor, or by a person who obtained the claimed invention directly or indirectly from the inventor in any circumstances not described above (section 14(4)(e), Patents Act).

(Section 14(4), Patents Act.)

For context, a disclosure to a person in confidence constitutes non-prejudicial disclosure and the disclosed information is not considered part of the prior art. A disclosure is made in confidence if made to a party bound by an obligation not to use or disclose the information. This can arise either via contract, or imposed by equity (*Dextra Asian*, at paragraph 42). For example, disclosure of the invention to a third party in confidence during negotiations to commercially exploit the invention is not prior art (*Dextra Asian*).

Therefore, disclosure of an invention due to, or as a consequence of the invention having been obtained unlawfully or in breach of confidence with respect to the inventor (section 14(4)(a) and section 14(4)(b), Patents Act), does not fulfil the public availability requirement and is not part of the prior art (*Dextra Asian*).

For disclosures made by way of a published patent application, an inventor can rely on the exception under section (14)(4)(e) of the Patents Act if the earlier application was:

- Filed without the consent of the inventor, or if the publication of the application was erroneous due to certain circumstances (section 14(6), Patents Act).
- Published prematurely contrary to the laws of the country in which the earlier patent application was filed. In this case, the earlier publication will only be treated as disclosed to the public on the date that publication should have occurred under the law (section 14(7), Patents Act).

To rely on these prior art exceptions, a patent applicant must file written evidence complying with the prescribed requirements under Patent Rule 8 in support of their reliance in those circumstances.

Novelty

Scope of Claims and Claim Construction

The novelty assessment first requires identification of the essential features of the claimed invention. These essential features are set out in the patent claims.

In construing the claims for the purposes of determining novelty, Singapore courts have adopted the “purposive approach” articulated by Lord Diplock in the judgment of *Catnic Components Ltd v Hill & Smith Ltd* [[1982] RPC 183, see for example the Singapore cases of *Lee Tat Cheng, FE Global Electronics Pte*, and [ASM Technology Singapore Pte Ltd v Towa Corp](#) [2018] SGCA 01).

Based on the purposive approach, patent claims are not given “a purely literal [construction]” derived from “meticulous verbal analysis” but are instead given a “purposive construction.” This has been phrased as the “threshold” question in *Lee Tat Cheng*, namely what the “notional skilled person [would] have understood the patentee to mean by the use of the language of the claims” (*Lee Tat Cheng* at paragraph 54). The task is therefore to determine the meaning of the word/phrase as it is used in the claim by the patentee, at the time of the patent application such that its meaning does not change over time and/or due to subsequent technological developments. A tribunal therefore “cannot attribute such an unnatural meaning to this word/phrase that it is tantamount to substituting it with another word/phrase” (*WL Ng-Loy, Law of Intellectual Property of Singapore (revised 3rd edition, Sweet & Maxwell Singapore 2022)(Law of Intellectual Property of Singapore) at [33.3.8]*). The purposive approach therefore aims to provide “as much objectivity and certainty as possible in the claim construction process” (*Law of Intellectual Property of Singapore at [33.3.8]*).

Analytical Framework for Determining Novelty

As stated in section 14(1) of the Patents Act, an invention is considered new “if it does not form part of the state of the art.” The assessment of novelty therefore comprises:

- The identification of relevant pieces of prior art for the specific invention, thereby establishing the state of the art.
- The assessment of whether the invention has been anticipated by any of these pieces of prior art, thus determining if the claimed invention is:
 - separate from the state of the art; and
 - therefore novel.

It should be noted that Singapore is an “absolute novelty” country. As such, the prior art that comprises the state of the art is not territorially restricted and includes material available anywhere in the world. It is not permissible to consider events or matters subsequent to the publication of the prior art. The prior art must be construed in light of events and matters existing as at the publication of the prior art.

A patent claim lacks novelty if the prior art discloses each and every element of the claimed invention, arranged as in the claim, in a single prior art reference document or activity. The claimed invention is compared against each individual piece of prior art,

and the question is repeated each time: has this particular piece of prior art anticipated the invention? Notably, this is distinct from the assessment of inventive step, where multiple references may be combined.

This analysis requires the prior art to disclose information or teachings which would inevitably lead to the claimed invention (*Merck & Co Inc v Pharmaforte Singapore Pte Ltd* [2000] SGCA 39, at paragraph 39). Whether this test is met can be explicit or implicit (*Element Six Technologies Ltd & Co Inc v Ila Technologies Ptd Ltd* [2020] SGHC 26 (*Element Six Technologies*), at paragraph 30). Even if the person reading the prior art does not have the knowledge that it contains teachings that inevitably lead to the claimed invention, this would constitute an "inherent" disclosure and the disclosure requirement is still met (*Element Six Technologies Ltd*, at paragraph 32).

The novelty assessment is essentially whether the prior art sufficiently discloses the claimed invention to enable a person skilled in the art to perform it without undue burden or inventive effort. In this regard, case law has defined a "person skilled in the art" as someone from the industry or field of technology relevant to the invention in question and who has all of the following attributes:

- Possesses the common general knowledge of the subject matter in question.
- Has a practical interest in the subject-matter of the patent.
- Is reasonably intelligent but unimaginative and unimaginative.

(Law of Intellectual Property of Singapore at [30.1.12].)

For more information on the person skilled in the art, see [Practice Note, AI and Patents: Key Considerations \(Singapore\): Hypothetical Person Skilled in the Art](#).

Therefore, a claimed invention is not novel if the prior art contains "clear and unmistakable directions to do what the patentee claims to have invented," in that the prior art is clearly shown to plant a "flag" at the precise destination of the patent claim (*Dien Ghin Electronic*, at paragraph 31). In other words, the claimed invention is not novel if the prior art would necessarily infringe the claimed invention if a patent were granted on the claimed invention (*Dien Ghin Electronic*, at paragraph 30).

Enabling Disclosure

To determine whether the prior art anticipates the claimed invention, thereby destroying novelty, Singapore courts apply an "enabling disclosure" test as set out, for example in *Mühlbauer AG v Manufacturing Integration Technology Ltd* [2010] 2 SLR 724 (*Mühlbauer AG*), at paragraph 17 and *Element Six Technologies*, at paragraphs 29 and 187. This means that the prior art must not only identify the subject matter of the claimed invention but must also do so in a manner which is sufficient to enable the person skilled in the art to make or obtain that invention (*Genelab Diagnostics*). The question to be asked is whether, on the assumption that the prior art contains information that discloses the invention, the prior art enables the person skilled in the art to make the claimed invention. If so, the enablement requirement is met. This is a fact specific inquiry (*Dien Ghin Electronic*, at paragraph 15).

There are two considerations in applying this framework for evaluating enablement. First, the specification of the patent must embrace an embodiment of the invention asserted in each of the claims with sufficient particularity to be understood and carried into effect by those in the industry without making further inventions or prolonged study of the matter. It need not be so detailed that no trial or error is required to perform the invention. Second, the description of the invention cannot be unnecessarily difficult to follow and must not contain any traps of seriously misleading statements that the reader cannot correct (*First Currency Choice*, at paragraph 62).

Inherency

If a prior art reference inherently discloses certain subject matter, notwithstanding the fact that this subject matter is not specifically described, this can be taken into account for the novelty assessment. In other words, if a person skilled in the art following the directions in the prior art will find that it inevitably results in the invention being made or done, the invention is not novel. This is notwithstanding the fact that the prior art might not have described the invention in the same terms as the patent (*Element Six Technologies*, at paragraph 31). For example, a claimed process or product would be anticipated by a prior art disclosure which, when put into practice, would necessarily fall within the scope of the claim, even if the prior art disclosure does not disclose particular parameters of the claimed invention.

The implicit features of a document may also be taken into account for novelty purposes. Therefore, if a person skilled in the art would interpret a potential prior art disclosure to include a particular feature without the feature being specifically mentioned, it would be considered an implicit feature of that disclosure. The person skilled in the art must come to this conclusion in light of common general knowledge available at the date of disclosure. Special knowledge must not be required for the matter to be understood. For example, the disclosure of a control arrangement for the cooling system of an internal combustion engine might not refer to the presence of a radiator or other heat exchanger in the system, but it is common knowledge that this is necessary. A novelty objection may therefore be raised even if the prior art did not specify this feature.

Other Key Novelty Considerations

In addition to the main novelty considerations discussed above, other important novelty considerations include:

- The prohibition against mosaicking (see [Mosaicking](#)).
- Generic and specific prior disclosures (see [Generic and Specific Disclosures](#)).
- New use claims (see [New Uses](#)).
- Claims to ranges or with parameter limitations (see [Ranges and Parameters](#)).

Mosaicking

For the purposes of assessing novelty, there is a general prohibition against "mosaicking" of several prior art references, which means that the claimed invention must be compared against individual prior art references separately and not collectively (*Rohm and Haas*, at paragraph 59). However, a limited exception to this prohibition applies where a reference document refers to an earlier document or where a series of papers which formed a series of disclosures refer to each other. In these situations, it is possible to refer to the earlier reference document in conjunction with the later document, but only to the extent of the portions in the earlier document that were referred to in the later document (see *Genelab Diagnostics*, at paragraphs 26 to 28 and *Mülbauer AG*, at paragraph 68).

Construing a prior art reference in light of common general knowledge does not constitute a breach of the mosaicking prohibition (*Dien Ghin Electronic*, paragraph 33).

In contrast, for the purpose of assessing obviousness, it is permissible to make a "mosaic" out of the prior art so long as the mosaic can be put together by an unimaginative person with no inventive capacity (*Mülbauer AG*, at paragraph 93).

Generic and Specific Disclosures

If a prior art reference discloses a specific embodiment, this disclosure can destroy the novelty of a later claim to that specific embodiment. Therefore, a claim which defines the invention by reference to alternatives will lack novelty if one of these alternatives is already known (paragraph 3.54 of the [Examination Guidelines for Patent Applications at IPOS](#) (Examination Guidelines)).

However, a generic disclosure will generally not anticipate specific claims. For example, a prior art disclosure of a metal coil spring will not anticipate a later claim to a coil spring made of copper (paragraph 3.55, Examination Guidelines).

New Uses

A new way of using a known apparatus may be considered novel if that specific use has not been clearly described before (paragraph 3.62, Examination Guidelines). However, patent claims are usually broadly interpreted. This means that if an existing product or method can be used for the new purpose, even if it was not actually used that way before, the new use may not be considered novel (paragraph 3.63, Examination Guidelines). There are some exceptions, such as claims to a known substance or composition for use in a surgical, therapeutic, or diagnostic method, or claims where a term in context limits a product by its interaction or environment. In these cases, the claim may be limited to that specific use or association. If the prior art disclosure is entirely unsuitable for the defined use, or would require modification to be suitable, the prior art will not destroy the novelty of the new use (paragraphs 3.65 to 3.67, Examination Guidelines). If a known substance is discovered to have a previously unknown medical use, this new medical use can be patented. Section 14(10) of the Patents Act provides that "in the case of an invention consisting of a substance or composition for use in a method of treatment of the human or animal body by surgery or therapy or of diagnosis practiced on the human or animal body," an invention can still be novel if "the use of the substance or composition in any such method does not form part of the state of the art," regardless of "the substance or composition [forming] part of the state of the art" (Law of Intellectual Property of Singapore at [30.2.32]).

Ranges and Parameters

When a patent claim uses a numerical range, the claim is not considered novel if any specific value within that range, including the endpoints, is already known from the prior art (paragraph 3.57, Examination Guidelines). If a claim covers a narrower sub-range within a broader known range, it may be novel only if the sub-range is sufficiently specific and not explicitly disclosed before, though any technical effect of the sub-range is considered separately for inventiveness (paragraph 3.58, Examination Guidelines).

Patent claims often use specific features or measurable properties, such as melting point or strength, to distinguish an invention from the prior art. These are known as specific parameters. If the prior art discloses the same features of the invention except for the stated parameter, the burden is on the applicant to provide convincing evidence, such as test results, to show that the claimed parameter is a distinguishing feature from the prior art. If not, the claim will not be considered novel.

Inventive Step

In Singapore, an invention involves an inventive step if it is not obvious to a person skilled in the art, who is also the basis for evaluating enablement in novelty determinations (see [Analytical Framework for Determining Novelty](#)) (section 15, Patents Act). Therefore, the inventive step assessment, also known as the obviousness or non-obviousness inquiry, involves two steps:

- The identification of the relevant state of the art for the claimed invention.

- A comparison of the claimed invention with the state of the art to determine if the invention is obvious to the hypothetical person skilled in the art.

Based on the approach adopted by the Singapore courts, the obviousness assessment takes place from the perspective of the "normally skilled but unimaginative addressee" at the effective filing date imputed with "what was common general knowledge in the art" at that date.

Relevant State of the Art

The state of the art used in the inquiry for obviousness is largely the same as that used in the assessment of novelty, with the provisions of section 14(3) of the Patents Act concerning earlier-filed but later-published patent applications excluded. Therefore, unpublished patent applications with earlier priority dates than that of the claimed invention are disregarded in the obviousness inquiry.

In addition, certain disclosures may be excluded from the relevant state of the art when viewed from the perspective of the hypothetical person skilled in the art. For the purposes of the obviousness inquiry, this hypothetical person is regarded as a "diligent researcher" and is entitled to disregard a prior art reference which they did not know of and which they were likely not to know of or pay attention to. In this regard, W L Ng-Loy, *Law of Intellectual Property of Singapore*, suggests that "an isolated use in some obscure part of the world" might not be relevant for the inventive step assessment (*at* [30.2.53]).

In Singapore, the concept of "analogous art" may be relevant to the obviousness assessment, although the term itself is not always explicitly used in local statutes or case law. The underlying principle is that only prior art that would have been reasonably considered by a person skilled in the art is relevant for the purposes of an obviousness determination. In practice, the assessment is whether the prior art would have been reasonably identified and considered by the skilled person. Therefore, if the prior art is from a remote or unrelated field, and there is no logical reason for the skilled person to consult it, it is unlikely to be considered analogous and thus relevant for obviousness. When determining whether an invention is obvious, the question arises as to which prior art references can be considered (such as mosaicked) by the notional person skilled in the art. As a result, if more documents must be combined across different fields to arrive at the invention, there is a likelihood that the invention may be found to be inventive. In this regard, the proximity of the fields from which the prior art comes is thus a factor. For information on the concept of nonanalogous prior art from a US perspective, see [Practice Note, Patent Prosecution: Section 103 Prior Art Obviousness Rejections \(Unpredictable Technologies\): Reasonable Expectation of Success](#).

Four-Step Windsurfing Test

When assessing obviousness, the Singapore courts have adopted the four-step approach set out in the English *Windsurfing* case (see for example, *Milbauer AG; Lee Tat Cheng; Rohm and Haas; Millennium Pharmaceuticals, Inc and another v Zyras Medical Co (sued as a firm)* [2023] SGHC 360):

- Identify the inventive concept embodied in the patent. This step involves claim construction, in which patent claims are to be construed "purposively" rather than "literally" (see [Scope of Claims and Claim Construction](#)).
- Assume the position of a hypothetical person skilled in the art, imputing to them what was common general knowledge in the art at the priority date.

- Identify the differences, if any, between the matter cited and the claimed invention. This step involves a comparison to see what, if anything, is new or different in the claimed invention.
- Decide whether those differences, viewed without any knowledge of the claimed invention, constituted steps which would have been obvious to the person skilled in the art or whether they required any degree of invention.

The fourth step of the *Windsurfing* approach is the crucial determination of obviousness, or the identification of an inventive step in the light of the state of the art. The key question to be answered is whether the invention is obvious in light of the state of the art, sometimes paraphrased as assuming the problem has been identified, would the hypothetical person skilled in the art have thought that the solution embodied in the invention was worth trying to see if it was the answer to the problem? The invention would be obvious if, in the hypothetical person's assessment, there is a fair expectation of success, and they would think it worth their while to try the claimed invention's solution.

This assessment is to be made without the benefit of hindsight, that is without the benefit of information available after the effective filing date (*Milbauer AG*, at paragraph 101). Furthermore, in this step the invention is compared against the state of the art in its entirety, combining all relevant pieces of prior art. Unlike the inquiry for novelty, mosaicking is permissible in the inquiry for obviousness. However, mosaicking is not allowed if it is not obvious for the hypothetical person to mosaic or combine the different pieces of prior art (*Martek Biosciences Corp v Cargill International Trading Pte Ltd* [2012] SGHC 35, at paragraph 54).

Singapore patent law does not explicitly require a "motivation to modify or combine" prior art references. Under the *Windsurfing* approach, the focus is on whether the differences between the claimed invention and the prior art would have been obvious to a person skilled in the art, considering their common general knowledge. The analysis is objective and does not require positive evidence of motivation or suggestion to combine references. The combination must be something that the skilled person, equipped with common general knowledge, would realistically consider. If the combination of references is not something the skilled person would have contemplated, the inventive step may be recognised. For information on motivation to combine from a US perspective, see [Practice Note, Patent Prosecution: Section 103 Prior Art Obviousness Rejections \(Unpredictable Technologies\): Motivation to Combine or Modify the Prior Art](#).

Similarly, the "reasonable expectation of success" standard is not a formal requirement in Singapore. The *Windsurfing* approach asks whether the skilled person would find it obvious to arrive at the claimed invention, not whether they would have a reasonable expectation of success in doing so. However, if the modification or combination of prior art would not have been attempted by the skilled person due to uncertainty or lack of expectation that it would work, this would be relevant to the assessment of obviousness. For information on reasonable expectation of success from a US perspective, see [Practice Note, Patent Prosecution: Section 103 Prior Art Obviousness Rejections \(Unpredictable Technologies\): Reasonable Expectation of Success](#).

Secondary Considerations

Although the primary test for inventive step is the *Windsurfing* approach, secondary considerations may possibly play a supporting role in the assessment of inventive step. Such considerations are not determinative on their own but may be relevant in close cases, or where the objective analysis is finely balanced. In practice, the evidentiary value of each type of evidence depends on its quality, relevance, and the strength of the connection to the inventive features of the claim. Nonetheless, ultimately, the objective analysis under the *Windsurfing* framework remains central.

Secondary factors that may be considered include:

- Going against conventional wisdom or acting "contrary to the mistaken prejudice," showing that "an apparent 'lion in the path' is merely a paper tiger" can be indicative of non-obviousness (*Milbauer AG*, at paragraph 100).
- Commercial success of the claimed invention based on the argument that such commercial success reflects how the claimed invention meets a long-felt need in the industry. Reliance on this factor requires proof that the commercial success is a result of the invention itself rather than other factors such as competitive pricing ([Ng Kok Cheng v Chua Say Tiong \[2001\] SGHC 143](#) (*Ng Kok Cheng*), at paragraph 44).

Irrelevant factors in the analysis include:

- Simplicity since there is "no bar to inventiveness" and it is "not equivalent to obviousness" (*Milbauer AG*, at paragraph 102).
- The time taken to arrive at a new concept since one could have a "flash of inspiration and come up with a new idea in a jiffy" (*Ng Kok Cheng*, at paragraph 40).
- The size of the inventive step since small steps are steps nonetheless, and an inventive step that seems "lilliputian" is "no less significant a step forward, a step which nobody else had taken before" (*First Currency Choice*, at paragraph 54). Following this logic, mere "workshop variation[s] of existing prior art" are not inventive steps ([ASM Assembly Automation Ltd v Aurigin Technology Pte Ltd \[2009\] SGHC 206](#), at paragraph 55).

Practical Considerations

Developing a Singapore Patent Portfolio

When building a patent portfolio in Singapore as part of a global strategy, it is crucial to understand the local standards for patentability, which are generally aligned with international norms but have specific procedural and substantive requirements. Key considerations include:

- Novelty and inventive step. Singapore requires absolute novelty, meaning any disclosure anywhere in the world before the effective filing date can be prior art. The inventive step (obviousness) standard is assessed from the perspective of a person skilled in the art, considering the common general knowledge and prior art.
- The limited prior art exceptions for certain disclosures by the inventor in particular circumstances.
- Patent-eligible subject matter. Under Singapore law, certain subject matter is not eligible for patent protection, for example, methods of medical treatment. For information on patent subject matter eligibility in Singapore, see [Practice Note, AI and Patents: Key Considerations \(Singapore\): Subject Matter Eligibility](#).
- The benefit of conducting prior art searches before seeking patent protection in Singapore, in order to obtain a preliminary assessment on patentability.

Evaluating Third-Party Singapore Patents

FTO studies and opinions should be based on both granted Singapore patents and published applications. Singapore does not have a utility model or petty patent system, but it does allow for patent term extensions for pharmaceutical patents. When conducting an FTO study, counsel should consider:

- The scope of the relevant patent claims. This requires a careful analysis of the claims of third-party patents and applications to determine if your client's product or process falls within, or is likely to fall within, their scope. For more information on the scope of patent protection, see [Practice Note, Scope of Patent Protection \(Singapore\)](#).
- Pending applications. Monitor competitor's pending applications that may mature into patents relevant to your client's product or process.
- Whether the relevant Singapore patent has lapsed or been revoked.

For information on FTO studies from a US perspective, see [Practice Note, Freedom-to-Operate Studies](#).

If an FTO study uncovers problematic patents, potentially licensing the patent should be considered before commercial launch to mitigate infringement risks. Licensing is a strategic option that can be considered at various stages of product development and commercialisation, including to avoid or resolve litigation. Before entering into a licensing agreement, it is essential to:

- **Assess patent validity and scope.** Counsel should conduct a thorough review of the patent's validity, enforceability, and claim scope in Singapore.
- **Evaluate alternatives.** Counsel should consider design-around options or the possibility of challenging the patent's validity before committing to a license.
- **Negotiate terms.** Any license terms, such as scope, duration, territory, royalties, and sublicensing rights, should align with the client's business objectives and provide the necessary FTO.

For information on IP transactions, see For information on IP transactions, see For information on IP transactions, see [Practice Note, Intellectual Property Transactions in Singapore: Overview](#).

Alternatively, counsel may consider seeking to invalidate or revoke a problematic third-party patent uncovered in an FTO study. Key points to consider include:

- Invalidation or revocation can only be initiated after a patent application has been granted. These processes allow any interested party to challenge the validity of a granted patent on the grounds of lack of novelty, inventive step, and other patent requirements. If the invalidation or revocation is successful, the patent may be invalidated or revoked in whole or in part. If unsuccessful, the patent remains in force.

- For challenges based on the prior art, counsel should gather robust evidence of prior public use, sale, or disclosure of the accused product in Singapore or elsewhere before the effective filing date. Singapore courts require clear and convincing evidence of public availability.

For more information on patent revocation proceedings, see [Practice Note, Patent Revocation Proceedings at the Intellectual Property Office of Singapore](#).

For more information on post-grant re-examinations, see [Practice Note, Patent Prosecution and Ex Parte Proceedings at the Intellectual Property Office of Singapore: Post-Grant Re-Examinations](#).

Addressing Infringement Allegations

Where an infringement accusation has been made, a potential infringer may argue that the asserted patent lacks novelty if the accused product itself was publicly available before the priority date of the patent.

In Singapore, if the accused product was disclosed to the public (by use, sale, or otherwise) before the effective filing date, it can constitute prior art and may be used to challenge the novelty of the asserted patent. The burden is on the challenger to prove that the accused product was indeed prior art and that it disclosed all the features of the claimed invention.

Strategies for Overcoming Obviousness Arguments

General patent prosecution best practices should address:

- **Claim drafting.** Draft claims with clear, specific, technical features that distinguish the invention from known prior art. Include a range of claim types (product, process, use) to maximise protection and flexibility. Use dependent claims to provide fallback positions in case broader claims are rejected. However, applicants should avoid:
 - broad, generic, or ambiguous claims that are more susceptible to obviousness attacks; and
 - double patenting by ensuring that claims in related applications are distinct.
- **Specification support.** Provide detailed and enabling descriptions, with alternative embodiments, of technical advantages, improvements, and unexpected results that support the claims. Include experimental data or comparative examples where possible.
- **Amendments.** Applicants should be prepared to amend claims to further distinguish over cited prior art during prosecution.

During prosecution, the applicant may address inventiveness objections by taking one or more of the following actions, where applicable:

- Arguing that the patent office mischaracterized the inventive concept, misunderstood the prior art, or failed to appreciate the technical contribution of the invention.

- Providing evidence of secondary considerations, such as:
 - commercial success and long-felt need (IPOS, Examination Guidelines for Patent Applications, at [4.62] to [4.71]); or
 - technical prejudice or teaching away in the prior art that would have discouraged the skilled person from arriving at the invention (IPOS, Examination Guidelines for Patent Applications, at [4.74] to [4.78]).

During litigation prior art validity issues may be addressed by:

- Expert evidence that seeks to establish technical differences and inventive step.
- Emphasising technical improvements, unexpected results, or synergistic effects not suggested by the prior art. The invention should be framed in terms of the technical problem solved and the non-obviousness of the solution.
- Procedural tactics, such as contesting the admissibility or sufficiency of the prior art evidence, and arguing for a narrow construction of claim terms where appropriate.

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